

REMARKS

Claims 68-95 are pending in this application. By this amendment, claims 69-72, 75, 76, 79, and 87 have been amended and new claims 94 and 95 have been inserted. Claims 69-72, 75, 76, 79, and 87 have been amended to change their dependency from claim 68 to new independent claim 94. Support for new claims 94 and 95 may be found at least in claim 68 and on page 8, lines 7-15.

It is respectfully submitted that the above amendments introduce no new matter within the meaning of 35 U.S.C. §132. Entry of the Amendment is proper under 37 C.F.R. §1.116 because it (a) places the application in *prima facie* condition for allowance for the reasons discussed herein; (b) does not raise new issues requiring further search and/or consideration by the Examiner because similar subject matter was previously considered by the Examiner and thus further consideration and/or search by the Examiner is not warranted; and (c) places the application in better form for appeal, should an appeal be necessary. For at least these reasons, entry of the present Amendment is respectfully requested. Accordingly, Applicant requests reconsideration and timely withdrawal of the pending rejections for the reasons discussed below.

Rejections under 35 U.S.C. §§ 102 and 103

1. Claims 68-70 and 72-81 stand rejected under 35 U.S.C. §102(e) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 7,089,876 to Porat ("Porat"). Applicant respectfully traverses this rejection for at least the

following reasons.

To establish an obviousness rejection under 35 U.S.C. § 103(a), four factual inquiries must be examined. The four factual inquiries include (a) determining the scope and contents of the prior art; (b) ascertaining the differences between the prior art and the claims in issue; (c) resolving the level of ordinary skill in the pertinent art; and (d) evaluating evidence of secondary consideration. *Graham v. John Deere*, 383 U.S. 1, 17-18 (1966). In view of these four factors, the analysis supporting a rejection under 35 U.S.C. 103(a) should be made explicit, and should "identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements" in the manner claimed. *KSR Int'l. Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007). Furthermore, even if the prior art may be combined, there must be a reasonable expectation of success, and the reference or references, when combined, must disclose or suggest all of the claim limitations. See *in re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Claim 68 recites, *inter alia*:

a tail unit comprising a head portion configured to float on the surface of the pool while the body unit is on the floor of the pool, the head portion comprising a connector designed for facilitating charging batteries or battery in the battery power pack by an external charger

Porat fails to teach or suggest at least these features of claim 68. In the Office Action, the Examiner maintains the rejection of claim 68, in particular, asserting that the combination of the power input/output connector 103 of the battery 102 of Porat, coupled with the connector outlets 50, 52, 54 which facilitate the use of the floating platform **as a**

source of power anticipates the feature of claim 68, the "head portion comprising a connector designed for facilitating charging batteries or battery in said battery power pack by an external charger." To support this conclusion, the Examiner further asserts that the use of the terms "input/output" in both features renders it clear that "power input from an external source could be routed to the robot on the bottom of the pool via floating platform 10." However, contrary to this assertion, it is respectfully submitted that the combination of the input/output connector 103 with the outlets 50, 52, 54 does not anticipate the above feature of claim 68, for at least the reasons noted below:

First, it is submitted that the mere use of similar language in connection with two separate and functionally unrelated elements, especially language which can be applied to many different types of elements, does not provide a basis for combining them.

Secondly, the connector outlets 50, 52, 54 are disclosed as being "provided to give maximum flexibility to the powering and use of the floating platform as a source of power to one or more other battery-powered devices" (col. 5, lines 16-19). In Porat, the term "devices" is used exclusively to refer to radios and other similar gadgets which are provided on the platform for entertainment purposes. Thus, these connectors facilitate use of the platform to route power from a source external to the platform to devices thereon or therewithin, i.e., by plugging these devices into the connector outlets, and not to the battery in the robot. This external source of power is used to power the floating platform, which is one of the functions of the battery. It is therefore not in accordance with the teachings of

Porat to use the connector outlets 50, 52, 54 to charge the battery, as this would be using one external source of power to supply power to another external source of power.

Furthermore, it is submitted that Porat subsequently clarifies that the power which can be routed via the connectors 50, 52, 54 may be supplied from the battery of the robot. The clarification is accomplished by reference to the connection between the robot and the platform as described in Fig. 1. As clearly described in col. 3, lines 46-50 of Porat, "electric power for platform 10 is supplied through a connecting power cable 90 that is attached to a robotic pool cleaner 100 that is positioned at the bottom surface 3 of the pool." Thus, not only would it not be obvious to modify the platform of Porat to route power input from an external source to charge the battery of the robot, but also would such a modification be against the teachings of Porat. Accordingly, Applicant submits that claim 68 is not anticipated by or obvious over the teachings of Porat.

New independent claim 94, while not being subject to the outstanding rejection, is also allowable. Claim 94 recites, *inter alia*:

a tail unit comprising a head portion adapted to float on the surface of the pool while the body unit is on the floor of the pool, said head portion comprising an antenna configured to receive commands from a wireless remote control unit being configured to perform one or more functions being selected from the group consisting of:

choosing the mode of cleaning operation of the robot;

causing the robot to move in a direction directed by a user and independent of scanning algorithm;

predetermining the cycle time; and

selecting the length of a pool to be scanned

Porat fails to teach at least the “antenna configured to receive commands from a wireless remote control unit being configured to perform” such functions recited in claim 94.

There is no teaching or suggestion about any wireless connection with such features in Porat.

Claims 69-70 and 72-81 depend from claim 94, and thus are allowable for at least this reason. Some of these dependent claims are deemed patentable even in view of their own features.

As to claim 69, Applicant respectfully disagrees with the Examiner’s conclusion that “Porat teaches *the cleaning robot wherein the head portion is configured to submerge below the water surface upon encountering an obstacle* (inherently the wall has been considered as obstacles)” (page 3, second full paragraph) at least because the platform of Porat is not designed to submerge upon encountering the wall. Rather, the platform of Porat is designed to serve as an in-pool entertainment center (see e.g., col. 3, lines 55-57). Hence, the asserted configuration “to submerge below the water surface” will apparently be against the teachings of Porat. Accordingly, claim 69 is allowable in view of its own features, besides its dependency of allowable claim 94.

As to claims 79 and 80, the Examiner reproduces the same reasoning as that in the previous Office Action. Thus, Applicant’s position remains the same, i.e., that the cited section of Porat discusses the geometry and generally construction of the floating platform

thereof. But the relevance to a controller for storing the robot's orientation is unclear. Moreover, it should be noted that actually such a feature is not disclosed at all in Porat. Thus, the Applicant respectfully submits that claims 79 and 80 are allowable in view of their own features, besides their dependency of allowable claim 94.

As to claim 81, Applicant respectfully notes that it is not clear which part of Fig. 1 discloses the feature of a detector for detecting a wall when impacted by the robot, wherein the alignment of the robot's orientation is performed after at least one wall detection. In fact, Porat does not describe detection of wall impacts at all, let alone alignment of the robot's orientation in response thereto. Accordingly, claim 81 is allowable in view of its own features, besides its dependency of allowable claim 94.

2. Claim 82 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Porat in view of U.S. Patent Application Publication No. 2004/0260428 applied for by Hadari ("Hadari"). Applicant respectfully traverses this rejection for at least the following reasons.

Claim 82 depends from claim 94. Hadari was cited by the Examiner in an attempt to teach the additional features of dependent claim 82, but fails to cure the deficiencies of Porat noted above with regard to claim 94. Thus, even if combined, Porat and Hadari do not teach at least "a tail unit comprising a head portion configured to float on the surface of the pool while the body unit is on the floor of the pool, said head portion comprising an antenna configured to receive commands from a wireless remote control unit being configured to perform one or more functions being selected from the group consisting of:

choosing the mode of cleaning operation of the robot; causing the robot to move in a direction directed by a user and independent of scanning algorithm; predetermining the cycle time; and selecting the length of a pool to be scanned," as recited in claim 94. Thus, claim 82 is allowable over the same combination of the references at least because it depends from allowable claim 94.

3. Claim 83 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Porat and Hadari in view of U.S. Patent No. 6,021,361 to Tanninga, *et al.* ("Tanninga"). Applicant respectfully traverses this rejection for at least the following reasons.

Claim 83 depends from claim 82. Tanninga was cited by the Examiner in an attempt to teach the additional features of dependent claim 83, but fails to cure the deficiencies of Porat and Hadari noted above with regard to claim 82. Thus, even if combined, Porat, Hadari, and Tanninga do not teach at least "a tail unit comprising a head portion configured to float on the surface of the pool while the body unit is on the floor of the pool, said head portion comprising an antenna configured to receive commands from a wireless remote control unit being configured to perform one or more functions being selected from the group consisting of: choosing the mode of cleaning operation of the robot; causing the robot to move in a direction directed by a user and independent of scanning algorithm; predetermining the cycle time; and selecting the length of a pool to be scanned," as recited in claim 94, and thus included in claim 82. Thus, claim 83 is allowable over the same combination of the references at least because it depends from allowable claim 82.

4. Claims 84-87 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Porat in view of U.S. Patent No. 6,842,931 to Porat, *et al.* ("Porat et al."). Applicant respectfully traverses this rejection for at least the following reasons.

Claims 84-87 depend from claim 94. Porat et al. was cited by the Examiner in an attempt to teach the additional features of dependent claims 84-87, but fails to cure the deficiencies of Porat noted above with regard to claim 94. Thus, even if combined, Porat and Porat et al. do not teach at least "a tail unit comprising a head portion configured to float on the surface of the pool while the body unit is on the floor of the pool, said head portion comprising an antenna configured to receive commands from a wireless remote control unit being configured to perform one or more functions being selected from the group consisting of: choosing the mode of cleaning operation of the robot; causing the robot to move in a direction directed by a user and independent of scanning algorithm; predetermining the cycle time; and selecting the length of a pool to be scanned," as recited in claim 94. Thus, claim 84-87 are allowable over the same combination of the references at least because they depend from allowable claim 94.

5. Claims 88-91 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Porat in view of U.S. Patent Application Publication No. 2003/0120389 applied for by Abramson, *et al.* ("Abramson"). Applicant respectfully traverses this rejection for at least the following reasons.

In the beginning of the Office Action, the Examiner takes note that Applicant's arguments filed on February 12, 2010, regarding the Examiner's previous rejection of claims 88-91 under 35 USC 103(a) were fully considered and found persuasive. In light of this, the Examiner withdrew his objection.

In the previous rejection, claims 88-91 was rejected based on Porat in view of U.S. Patent Application Publication No. 2008/0281481 applied for by Abramson, *et al.* ("Abramson '481"). In the outstanding rejection, this combination of prior art is changed to Porat in view of Abramson. Abramson '481 is constitutes part of a "CIP chain" which includes Abramson. Actually, the paragraphs of Abramson cited in the outstanding Office Action are almost exactly the same as those of Abramson '481 cited in the previous Office Action. In addition, the text of the current rejection is the same as that of the previous rejection. In view of the above, it is respectfully submitted that the current rejection of claims 88-91 is a recasting of the previous rejection, based on a secondary reference which is only bibliographically different. Therefore, since Applicant's previous arguments were, by the Examiner's admission, fully persuasive, they will apply, *mutatis mutandis*, in the outstanding rejection. Thus, it is respectfully requested that the Examiner withdraw the rejection of claims 88-91, at least based on the arguments presented previously and found persuasive.

6. Claim 71 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Porat in view of Thrum, *et al.*, "Probabilistic Algorithms and the Interactive Museum Tour-Guide

Robot Minerva," published July 2000 ("Thrum"). Applicant respectfully traverses this rejection for at least the following reasons.

Claim 71 depends from claim 94. Thrum was cited by the Examiner in an attempt to teach the additional features of dependent claim 71, but fails to cure the deficiencies of Porat noted above with regard to claim 94. Thus, even if combined, Porat and Thrum do not teach at least "a tail unit comprising a head portion configured to float on the surface of the pool while the body unit is on the floor of the pool, said head portion comprising an antenna configured to receive commands from a wireless remote control unit being configured to perform one or more functions being selected from the group consisting of: choosing the mode of cleaning operation of the robot; causing the robot to move in a direction directed by a user and independent of scanning algorithm; predetermining the cycle time; and selecting the length of a pool to be scanned," as recited in claim 94. Thus, claim 71 is allowable over the same combination of the references at least because it depends from allowable claim 94.

7. Claims 92 and 93 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Porat in view of U.S. Patent No. 7,144,057 to Young, *et al.* ("Young"). Applicant respectfully traverses this rejection for at least the following reasons.

Independent Claim 92 is directed to a cleaning robot adapted to move in a swimming pool in accordance with commands from a main controller therein, the robot when in use being free of any cables connected to an external power supply, and having a

body unit with a battery power pack, adapted to move along the floor and/or walls of said pool, and a tail unit comprising a head portion adapted to float on the surface of a pool, and a tethering cable attached at least in use, to the body unit; the robot comprising a means for detecting its orientation in relation to a fixed direction.

With regard to Claim 92, the Examiner admits that the feature of "the robot comprising a means for detecting its orientation in relation to a fixed direction" is not disclosed in Porat, but asserts that this feature is disclosed in Young, by virtue of its inclusion of a GPS sensor and a digital compass. The Examiner alleges that Young discloses "a cleaning robot," suggesting that it would be obvious to combine the two references. It is respectfully submitted that Young does not disclose nor suggest that the robot disclosed therein is designed for cleaning, and certainly not for cleaning a pool. Rather, it is for use as a robotic agent (e.g., for use under battlefield conditions), especially configured for obtaining and transmitting data (see, e.g., col. 1, lines 19-27 and 47-54; col. 5, lines 65-67). Therefore, explanations why it would be obvious to implement the features of a GPS sensor and a digital compass in the robot of Porat should be offered in support of this rejection. To support the rejection, the Examiner asserts that "[i]t would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the cleaning robot type of Porat, with the digital compass type of Young et al., because this modification would have introduced the digital compass [to] Porat's, so that the GPS sensor can communicate with the digital compass, thereby improving the efficiency and the reliability of the cordless pool cleaning robot."

However, Applicant respectfully submits that the above reasoning is circular, in that it offers for modifying the robot of Porat with the compass of Young is to introduce a digital compass. The rationale of the GPS sensor being able to communicate with the digital compass is both lacking in its own right, and seemingly out of place, because no GPS sensor is defined in the current claims. Moreover, it is submitted that the Examiner's contention that such a modification of Porat would improve "the efficiency and the reliability of the cordless pool cleaning robot" is presented without any indication of how the efficiency and the reliability would be improved, much less how such an improvement would have been obvious.

Furthermore, it is submitted that there is no motivation in Porat, or in prior art in general (including general knowledge in the field), to integrate a means for detecting the robot's orientation in relation to a fixed direction. This is because such a feature would have served no useful purpose prior to the presently claimed subject matter. In the present application, a scanning algorithm is described, wherein the orientation of the robot in relation to a fixed direction is taken into account (see, e.g., page 10, line 26 - page 12, line 8). Accordingly, Applicant respectfully submits that claim 92 is allowable for at least this reason. Claim 93 depends from claim 92 and thus is allowable for at least this reason.

Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. §§ 102(e) and 103(a) rejection of claims 68-93. New claims 94 and 95 are also allowable. Since none of the other prior art of record, whether taken alone or in any combination, discloses

or suggests all the features of the claimed subject matter, Applicant respectfully submits that claims 68-95 are allowable.

CONCLUSION

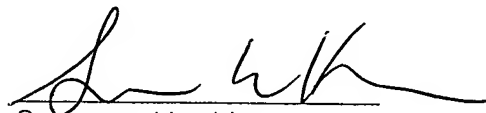
Applicant believes that a full and complete response has been made to the pending Office Action and respectfully submits that all of the stated grounds for rejection have been overcome or rendered moot. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicant's undersigned representative at the number below to expedite prosecution.

If an extension of time is necessary to prevent abandonment of this application and is not filed herewith, then such extension of time is hereby petitioned for under 37 C.F.R. §1.136(a). Any fees required for further extensions of time and any fees for the net addition of claims are hereby authorized to be charged to our Deposit Account No. 14-0112. Prompt and favorable consideration of this Reply is respectfully requested.

August 19, 2010

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Respectfully submitted,
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A handwritten signature in black ink, appearing to read 'Susanne Hopkins', written over a horizontal line.

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